note radiating from the point of origin is able to carry in all directions over the chest wall, say 6 cm., when we approach within 4 cm. of the border of the lung a considerable portion of the circle is cut off and the mass of vibrations equally diminished. The same explanation holds good for the frequency with which a tympanitic note is heard high up in the left axilla: in this instance the air in the stomach is thrown into vibrations. Upon the same basis is explained the areas of paravertebral dulness and paravertebral resonance in pleural effusions. The more elastic the chest wall the wider the area of superficial transmission. The practical importance of the principle is found especially in its application to children. Any position the child may take or any manner of holding it which will compress one side or a portion of a side may give rise to percussion differences which have no pathological basis.

The Pathogenesis of Acute Pancreatic Hemorrhage and Pancreatic Necrosis.—PALYA (*Berl. klin. Woch.*, 1906, xliii, 1562), from a consideration of the views of Chiari and others of the self-digestive action in disease of the pancreas, had his attention drawn to an important factor which had been previously disregarded. The work of Pawlow and his pupils has proved that the pancreatic secretion itself is inactive and that it becomes efficient only when mixed with intestinal juice. This activating power resides in the substance Pawlow calls enterokinase, which in very small quantities can convert the trypsinogen into active trypsin. To determine the importance of the presence of this substance in the gland itself Palya performed four sets of experiments:

1. The injection of intestinal mucosa extracts. (*a*) In 2 animals the extract was injected directly into the substance of the gland. One was positive, 1 negative. (*b*) In 5 the centrifuged extract was injected intraparenchymatously. Three were positive; 2 negative. (*c*) In 3 the centrifuged extract was injected into the duct; 2 were positive, 2 negative. In 2 the centrifuged and filtered extract was injected into the duct; 2 were positive; 1 negative. (*d*) In 4 enterokinese prepared according to the directions of Bayliss and Starling was injected into the duct. All were negative. In the positive cases the animals died within twenty-four hours (1 in twenty-nine hours). Necrosis and hemorrhage of the pancreas and more or less widespread fat necrosis were found. In 3 cases there was simple swelling of the gland, but microscopically this also showed necrosis. Fat necrosis was marked in all but 1 animal, which died in five hours. Of the animals which recovered some were extremely ill and a few even moribund. Later laparotomies revealed a hardening and contraction of the gland, peripancreatic adhesions and, twice, small abscesses in the neighborhood of the duct. That these effects were due to the extract and not to bacteria which may have been introduced is indicated by the facts that fat necrosis seldom follows injection, that the period between injection and death was so short, that the anatomical changes were not those of a bacterial infection, and that the fat necrosis occurred even with the carefully filtered extract. The action of bacterial toxins or of bacterial kinese cannot be definitely ruled out. The entire absence of reaction after injections of enterokinase would seem to reject the supposed activating influence of the extract, but it is possible that the particular

preparation may have been faultily prepared or the presence of too large a quantity of enterokinase may have frustrated its own activity.

2. The injection of intestinal contents. Seven dogs received from 1 to 3.5 c.c. of duodenal contents into the pancreatic duct. In from twenty to thirty hours all succumbed, and all showed most extensive fat necrosis. In 4 the pancreas was the seat of extensive hemorrhage. In the other cases there was simple swelling of the gland, but microscopically all steps from simple parenchymatous degeneration to complete necrosis were observed.

3. In one instance 2.5 c.c. of the filtrate of a colon culture was injected into the duct. The animal after a few days' illness recovered, while a control which received the same subcutaneously died after a few hours.

4. Trypsin experiments. Seven animals were injected with solutions of trypsin and all proved positive. The lesions were as in the other experiments.

The most satisfactory results and the most extensive lesions were obtained with duodenal contents. As explained under the experiments with intestinal mucosa extract, it is hardly possible that the bacteria present could be responsible for the lesion. Nor can the oil, blood, bile, fatty acids or other substances, all of which are present in very small quantities, be an important factor in the light of previous experiments by numerous authors. It is known that a very small amount of enterokinase will activate a large amount of pancreatic secretion, and the uniform positive results following the injections of trypsin indicate that the mode of action of the duodenal contents is by causing such a conversion.

An Experimental Investigation of Sahli's Desmoid Reaction.—SAITO (*Berl. klin. Woch.*, 1906, xliii, 1305). Sahli has suggested a method of ascertaining the functional efficiency of the stomach, depending upon its ability to digest catgut. Small rubber bags are filled with methylene blue or salicylic acid or iodoform and tied with catgut strings. One of these is administered after a meal and the time ascertained when the substance appears in the urine or sputum. Alexander and Schlesinger have shown that various substances are excreted by the same patient in different lengths of time, and in making comparisons a given substance must be constantly used. In disturbed gastric activity there is a distinct lengthening of the reaction time, most noticeable in subacidity or anacidity. Three factors are of importance in the reaction: (1) The solution of the catgut; (2) absorption of the drug; (3) its excretion. The third factor Saito allows to be constant in normal individuals, and proceeds to an examination of the other two. By a large number of experiments he shows that although catgut is not digested by pure pancreas secretion nor by pancreas secretion and gastric juice, nor by gastric juice and intestinal secretion, yet the mixture of pancreas secretion and intestinal extract will dissolve it in from six to twenty-seven hours. In cases of lost gastric secretion the desmoid, therefore, may still appear. Allowing that in a given case the catgut is dissolved in the stomach, there are other factors which may interfere with the correct interpretation of results. Saito shows that the rapidity of solution of the catgut depends upon the concentration of the digesting fluid, and